FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION
(please fill in the highlighted areas)

I. APPLICANT INFORMATION

A. Applicant Name: Montana Fish, Wildlife & Parks (Carol Endicott, project manager)

B. Mailing Address: 1354 Highway 10 West

C. City: Livingston State: MT Zip: 59047

Telephone: (406) 222-3710 (cendicott@mt.gov)

D. Contact Person: Carol Endicott

Address if different from Applicant:

City: State: Zip:

Telephone:

E. Landowner and/or Lessee Name (if other than Applicant): Lower Shields Canal Company
Robert F. Eyman (President)
Michael C. Dailey (Sec/Tres.)

Mailing Address: 247 Shields River Road East

City: Livingston State: MT Zip: 59047

Telephone: Mike Dailey 222-0523
Bob Eyman 686-4498

II. PROJECT INFORMATION*

A. Project Name: Chadbourne Diversion Dam Repair, Retrofit, and Yellowstone Cutthroat Trout (Yellowstone cutthroat trout) Conservation (Shields River)

River, stream, or lake: Shields River

Location: Township T1N Range R9E Section 13

County: Park County

B. Purpose of Project:

The purpose of this project is to secure and protect one of the few remaining basin-level strongholds for Yellowstone cutthroat trout in Montana. This project will also increase the longevity and secure the function of an irrigation diversion that delivers water to 13 farms and ranches in the lower Shields River watershed

C. Brief Project Description:

The Chadbourne diversion spans the Shields River, which makes it a barrier instrumental in preventing wholesale invasion of rainbow trout into the Shields River watershed. As a result, this basin retains nonhybridized to slightly hybridized populations of Yellowstone cutthroat trout throughout most of its streams. The diversion is old and is in disrepair, and its failure would open the basin to invasion by rainbow trout. Moreover, this failure would present significant hardship to water users who rely on water delivered by the structure. Although the diversion is largely impassable, some rainbow trout are likely able to ascend the structure during certain flows. This low level of invasion presents substantial risk to the mostly nonhybridized Yellowstone cutthroat trout in the basin above the Chadbourne diversion.

The project has two objectives. First is to conduct repairs to prevent structural failure that would jeopardize the core and conservation Yellowstone cutthroat trout populations occupying the basin upstream, and would provide a hardship to water users. In addition, several structural modifications will ensure that the dam is a velocity and leap barrier to any fish attempting to access the Shields River watershed upstream of the diversion.

This reapplication is the result of a significant change in scope for the Chadbourne project that received funding in the June 2011 Future Fisheries Improvement Program cycle. A modification became necessary due to landowner concerns. Specifically, the fish passage component was eliminated from this phase of the project. Because this changed the proportion of matching funds for the project, this application represents a change in a previously awarded grant. FWP will continue a dialogue with these landowners and installation of the fish passage structure may be possible later. Note that this modification does not influence the engineered designs for the diversion. The design sheets still show the fish passage structure as FWP will request bidders to include this component in their bids. These cost estimates will be useful ensuring we obtain sufficient funds should the fish passage component occur in the future.

D. Length of stream or size of lake that will be treated:

The footprint of the diversion is approximately 2,400 ft^2. This project will protect over 375 miles of stream supporting Yellowstone cutthroat trout.

E. Project Budget:

Grant Request (Dollars): **$ 126,949**

Contribution by Applicant (Dollars): $ _____ In-kind $ _____
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 199,550 In-kind $ 5000
(attach verification - See page 2 budget template)

Total Project Cost: $ 331,499

F. Attach itemized (line item) budget – see template

See Attachment A

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

See Attachment B

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?

Yellowstone cutthroat trout is the species that will benefit from this project.

B. How will the project protect or enhance wild fish habitat?

This project will protect a basin-level stronghold for native Yellowstone cutthroat trout. This action will complement existing and planned habitat restoration actions sponsored by the Shields Valley Watershed Group throughout the basin. The culmination of these efforts will be measurable on a watershed scale, with reduced threats from hybridization with rainbow trout, and improved habitat throughout the basin.

C. Will the project improve fish populations and/or fishing? To what extent?

This project will secure angling opportunities for native Yellowstone cutthroat trout within the Shields River watershed. Given the marked reductions in distribution and abundance of native cutthroat trout in Montana, conservation of Yellowstone cutthroat trout on a basin level will provide considerable benefit to anglers targeting native species.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?

This project will not increase public fishing opportunity, beyond that which is already available; however, the project will secure opportunities to catch native Yellowstone cutthroat trout in a beautiful setting. Numerous bridges, a county right of way, and a fishing access site provide access to the Shields River and many landowners allow access across their private property when asked.

E. If the project requires maintenance, what is your time commitment to this project?

The Lower Shields Canal Company will be responsible for future operation and maintenance costs associated with the diversion and head gate through their annual operating budget and supplemental contributions by water users following their bylaws.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?

The Chadbourne diversion is an old structure, built in 1908. The threats to its structural integrity are the natural consequences of occupying an active river channel for over a century. The ability of rainbow trout to pass over the structure in recent years is likely

the result of three factors. First, a scour hole has formed at the downstream end of the apron, and this pool provides a vantage for fish to leap towards the structure. Likewise, incremental creation of a splash pad downstream to prevent the scour hole has provided roughness up to the face of the structure that may facilitate passage. Finally, a notch intended to pass bed load and woody debris may be passable during certain flows.

Correcting the causes of degradation will include repairing the structure to increase its longevity and make the structure impassable. The alterations will include fortifying the existing front wall of the structure with installation of an ogee face. This will increase the width of this most vulnerable part of the structure and provide a leap and velocity barrier to fish. Another component is elimination of the sediment passage notch, which the irrigation company has not found to be effective as logs lodge along the length of the structure. The retrofit will entail making height of the face of the dam of uniform height across its length. The canal company will backwater flows to deliver water into their canal by installing check boards across the entire face of the diversion. Currently, the check boards extend only half way across. Replacing the irregular splash pad with a uniform, steep apron will solve the scour hole and fish passage problems. Although the periodic concrete pours are an effective stopgap measure, the scour hole simply migrates to another location. This project will provide a permanent fix that will solve the scour creation problem and create an impassable element. The new splash pad will prevent the formation of a scour hole and will provide a velocity and leap barrier to fish. Finally, installation of riprap downstream of the apron will armor the streambed against formation of a scour below the pad.

G. What public benefits will be realized from this project?:

By securing the Shields River watershed against invasion by rainbow trout, this project will protect a basin-level stronghold for native Yellowstone cutthroat trout. Losing the Shields River watershed as substantial habitat for core and conservation populations would increase justification for including Yellowstone cutthroat trout for protection under the Endangered Species Act. This would have negative consequences for area ranchers who would potentially lose flexibility in their operations. Likewise, Montanans benefit with conservation of this component of their natural heritage.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

Repairing the Chadbourne diversion will be beneficial to the 13 farms and ranches with water rights from this diversion.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No.

J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: _____ Date: _____

Sponsor (if applicable): _____

***Highlighted boxes will automatically expand.**

Mail To: **Montana Fish, Wildlife & Parks**
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

Incomplete or late applications will be returned to applicant.

Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

Attachment A: Budget

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
Personnel								
Survey	1	lump sum	$ 4,800	$ 4,800			$ 4,800	$ 4,800
Design	1	lump sum	$ 36,400	$ 36,400			$ 36,400	$ 36,400
Plans and Specifications	1	lump sum	$ 25,300	$ 25,300			$ 25,300	$ 25,300
Construction cost estimate	1	lump sum	$ 4,400	$ 4,400			$ 4,400	$ 4,400
Oversight	1	lump sum	$ 15,000	$ 15,000			$ 15,000	$ 15,000
Archeology	1	lump sum	$ 10,000	$ 10,000		$ 5,000	$ 5,000	$ 10,000
Geotechnical analysis	1	lump sum	$ 10,250	$ 10,250			$ 10,250	$ 10,250
Erosion control and control of water								
Control of water	1	lump sum	$ 30,800	$ 30,800			$ 30,800	$ 30,800
Erosion control fabric	100	square yards	$ 6	$ 550			$ 550	$ 550
Straw wattle	150	linear feet	$ 3	$ 495			$ 495	$ 495
Site Preparation & Revegetation								
Mobilizatiion & demobilization	1	lump sum	$ 22,000	$ 22,000	$ 22,000			$ 22,000
Site access & staging	1	lump sum	$ 3,300	$ 3,300			3,300.00	$ 3,300
Clearing & grubbing	1	lump sum	$ 2,200	$ 2,200			$ 2,200	$ 2,200
Portage signs	3	each	$ 330	$ 990			$ 990	$ 990
Willow salvage & replanting	1	lump sum	$ 1,100	$ 1,100	$ 1,100			$ 1,100
Seeding	1010	SY	$ 0.55	$ 556			$ 556	$ 556

Fish Barrier Structure and Diversion Repairs								
Demoltion of existing rock and concrete apron	1	lump sum	$ 16,500	$ 16,500	$ 16,500	$ -		$ 16,500
Structural backfill	110	cubic yards	$ 66	$ 7,260	$ 7,260	$ -		$ 7,260
Flowable fill	45	cubic yards	$ 154	$ 6,930	$ 581	$ -	$ 6,349	$ 6,930
Geotextile fabric	116	square yards	$ 6	$ 638	$ 638	$ -		$ 638
Bedding	50	cubic yards	$ 33	$ 1,650	$ 1,650	$ -		$ 1,650
Concrete ogee spillway	64	cubic yards	$ 825	$ 52,800	$ 52,800			$ 52,800
Concrete splash pad	37	cubic yards	$ 660	$ 24,420	$ 24,420	$ -		$ 24,420
Concrete retaining wall	2	cubic yards	$ 825	$ 1,650			$ 1,650	$ 1,650
Irrigation diversion hardware	1	lump sum	$ 5,500	$ 5,500			$ 5,500	$ 5,500
Emergency repairs (flood damage, wingwall repair)	1	lump sum	$ 14,000	$ 14,000			$ 14,000	$ 14,000
Channel Construction								
Rock type 1 (downstream of splashpad)	485	cubic yards	$ 66	$ 32,010			$ 32,010	$ 32,010
			TOTALS	$ 331,499	$ 126,949	$ 5,000	$ 199,550	$ 331,499

CONTRIBUTOR	TOTAL
Renewable Resource Grant and Loan Program (DNRC)	$ 99,500
US Fish and Wildlife Service Fish Passage Program	$ 25,050
Future Fisheries Improvement Program	$ 126,949
Western Native Trout Initiative	$ 50,000
Lower Shields River Canal Company	$ 14,000
Gallatin National Forest	$ 16,000
	$ 331,499

Attachment B

Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or information necessary to evaluate the merits of the project. If the project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

The Shields River watershed (Figure 1) is a basin-level stronghold for nonhybridized to slightly hybridized Yellowstone cutthroat trout. This native species occupies 66% of their historic habitat in the basin's streams. This relatively wide distribution is the greatest remaining extent of Yellowstone cutthroat trout of all NRCS delineated 4th code hydrologic units occurring mostly in Montana (Table 1). The Chadbourne diversion has been instrumental in maintaining this watershed as a stronghold for Yellowstone cutthroat trout, as it forms a barrier that prevents wholesale invasion of rainbow trout from the lower Shields and Yellowstone rivers. Hybridization with rainbow trout is the leading cause of decline for native Yellowstone cutthroat trout (Kruse et al. 2000), and rainbow trout are abundant in the waters downstream of the Chadbourne diversion.

This watershed has been the focus of considerable effort to conserve Yellowstone cutthroat trout, involving collaboration among private landowners, agencies, the Shields Valley Watershed Group, and nonprofit organizations. Part of the justification for formation of a watershed group in this largely agricultural watershed focused on conserving Yellowstone cutthroat trout as part of their commitment to stewardship of the land and water resources in the basin. The Shields Valley Watershed Group has sponsored numerous habitat restoration projects, and has completed a watershed restoration plan that will improve habitat and water quality basin-wide. These efforts will complement the considerable extent of excellent habitat afforded through the existing widespread commitment to land stewardship. FWP and the US Forest Service have nearly completed a conservation strategy for the Shields River watershed, which will provide an additional means to prioritize project and conserve Yellowstone cutthroat trout in the Shields River watershed. A principle component of the conservation strategy for the Shields River is maintenance of the function of the Chadbourne diversion, as a source of water for water users, and as a barrier to rainbow trout invasion.

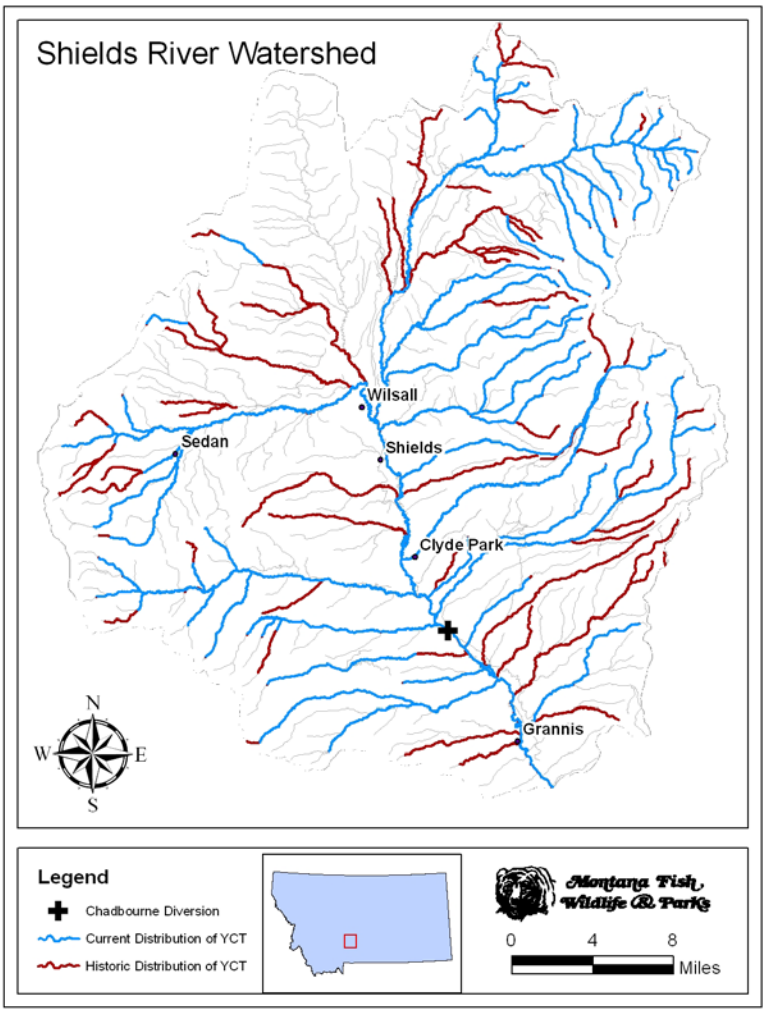

Figure 1: Shields River watershed, showing historic and current distribution of Yellowstone cutthroat trout.

Table 1: Comparison of historic and current occupied stream miles for 4th level hydrologic units with substantial stream miles in Montana (from May et al. 2007).

Name	*HUC*	*Historically Occupied Miles*	*Currently Occupied Miles*	*Percent of Historic Still Occupied*
Upper Yellowstone	10070002	1115.96	560.2	50%
Shields	**10070003**	**682.12**	**452.7**	**66%**
Upper Yellowstone-Lake Basin	10070004	287.99		0%
Stillwater	10070005	416.22	103.4	25%
Clarks Fork Yellowstone	10070006	524.61	81	15%
Upper Yellowstone-Pompey's Pillar	10070007	273.41		0%
Pryor	10070008	225.89	26.8	12%
Big Horn Lake	10080010	277.76	64.5	23%
Shoshone	10080014	172.48	4.1	2%
Lower Bighorn	10080015	422.48	7	2%
Little Bighorn	10080016	223.56	20	9%

Structural Stability and Fish Passage Investigations

This project has been a conservation priority for Yellowstone cutthroat trout since 2004, with recognition of the probability of rainbow trout passing over the structure, and awareness of its state of disrepair and potential for failure. Annual fish surveys find large, apparent fluvial rainbow trout upstream of the diversion, and these fish likely originate in the lower Shields or Yellowstone rivers (S.T. Opitz, FWP, personal communication). Observable damage to the structure, and the presence of a large scour hole downstream, resulted in concern regarding the structural stability of the diversion. Because the ability of the structure to be a permanent and total barrier to rainbow trout was in question, FWP commissioned several studies to evaluate its structural integrity and the potential for rainbow trout to pass over the structure (Confluence 2006; OASIS 2006; Fullerton 2010; Allied Engineering 2011).

Photos of the diversion illustrate its features relating to fish passage, and concerns regarding its structural stability. Figure 2 shows the downstream end of the diversion, with the 5 × 10-ft scour hole and unformed splash pad. The splash pad is the result of repeated concrete pours to prevent the formation of a scour to undermine the diversion. From a fish passage perspective, the scour and rough pad increase the ability of fish to obtain access over the diversion. The pool presents an upwelling to leap from, and the roughness of the splash pad provides current refugia that can facilitate swimming to and over the structure. Another feature with potential to pass fish is a notch on the face of the diversion designed to pass sediment and debris (Figure 3).

Figure 2: Downstream of the diversion showing scour hole and unformed splash pad (from Allied

Engineering 2011).

Figure 3: View of Chadbourne diversion looking upstream (Allied Engineering 2011).

A detailed investigation of the potential for the structure to pass fish involved hydraulic modeling under varying flows (OASIS 2006). Rainbow trout may be able to swim through the sediment transport notch when the planks blocking this sluiceway are removed, the diversion gates are closed, and flows are near or below 300 cfs. The planks are in place during the irrigation season, but their removal during part of the year may result in rainbow trout being able to pass over the Chadbourne diversion. The presence of large, apparently fluvial rainbow trout in the Shields River upstream of the Chadbourne supports the model results, as these fish likely originated in the larger river system downstream of Chadbourne (S.T. Opitz, FWP, personal communication).

Erosion and wear on the structure, and the presence of the large scour downstream of the diversion resulted in concerns over the potential for the diversion to fail. FWP commissioned two analyses of the structural stability of the Chadbourne diversion, and requested recommendations to ensure its longevity. The initial investigation identified the scour hole as presenting a risk of undermining the diversion structure, and found the right wall of the head gate structure needed (Fullerton 2010). (The Shields Canal Company has since fixed the damaged headgate.) This investigator felt that the structure was not in imminent danger of failure, but these repairs were warranted to ensure structural longevity.

A second structural investigation involved an in-depth evaluation of the potential stability of the

diversion, cores of the structure to determine its composition, assessment of geotechnical stability of the dam location and footings, and evaluation of the threats posed by the downstream scour hole (Allied Engineering 2011). With respect to the assessment of the structural integrity of the diversion, this investigation found cracks and voids on the east and west walls, damage to three of the seven downstream buttresses, and wear and erosion on the downstream face of the dam. The biggest problem was the erosion that had occurred along a relatively long section of the downstream face of the dam (Figure 4). This wear had claimed between 3 and 6 inches of the wall. This wall is now a relatively thin element, and as it is constantly subjected to water pressure, it the most susceptible component of the structure. Flooding in 2011 proved the vulnerability of the face of the dam, as a 10-foot chunk fell off and required emergency repair (Figure 6). Other recommendations include repairing or replacing the three damaged, downstream abutments.

The geotechnical component of the survey evaluated the geotechnical stability of the diversion, the existing orientation of the dam, and the presence of footings, and the materials they bear upon (Allied Engineering 2011). Fortunately, much of the structure lies on bedrock, which provides a solid foundation.

Evaluation of the downstream scour hole noted that the concrete repairs, while “not pretty” had been effective in pushing the scour hole further away from the dam, and has prevented undermining of the footings (Allied Engineering 2011). Nonetheless, formation of a hole within the splash pad threatens to cut under the diversion. Recommendations included repair or replacement of the splash pad, and installation of appropriate sized riprap at the downstream end of the pad to fill and prevent formation of another scour hole. Note that these investigators were not tasked with considering fish passage issues. Applying their recommendations in ways compatible with fisheries concerns would make removal of the existing splash pad and replacement with a smooth concrete pad the preferred alternative. Installation of appropriate sized riprap at the downstream end of the new pad would prevent formation of another scour hole that could undermine the new pad, and provide a vantage for leaping trout to perhaps gain access over the dam.

Figure 4: Center of diversion showing erosion and spalling on the front of the structure (Allied Engineering 2011).

Figure 5: Broken wall of the Chadbourne diversion and cobble berm placed to check water.

Retrofit to Prevent Rainbow Trout Passage

Existing conditions with potential to facilitate fish passage over the Chadbourne diversion include the scour hole, the roughness of the splash pad, and the presence of a sediment and debris transport notch on the east side of the diversion. Repairs to the face of the diversion, combined with replacement of the existing splash pad with a smooth apron and installation of riprap below the new pad will be a component of the approach to prevent fish passage. The Future Fisheries Improvement Program grant request would be applied to demolition of the existing unformed splash pad, and replacement with a smooth, engineered apron.

Currently, much of the front of the dam serves as a leap barrier preventing rainbow trout and other species from gaining access over the structure. This part of the weir is also perhaps the most vulnerable component of the structure given the erosion of concrete along the face of the dam, and the constant water pressure exerted on it (Allied Engineering 2011). Solutions to fortifying the dam face will have a dual purpose in preventing fish passage. Retrofitting the face of the dam with an ogee, or curved front, will increase the width of the wall and provide an impassable feature (Figure 5). This design is a solution to an observed phenomenon with sharp-crested walls where the jet of water forms a standing wave behind the cascade during some flows. At such structures, if rainbow trout can leap through the falling water, they can use the turbulence behind the waterfall to leap vertically over the structure. The backwards S curve of an ogee front results in the water clinging to the face of the diversion and prevents formation of the turbulence behind the jet of water.

Figure 6: Example of an ogee fronted weir that does not allow formation of a standing wave behind the jet of water.

The design selected to prevent passage of fish through the notch is to eliminate it. The face of the diversion will be the same height across its length. The irrigation company will install check boards across the entire structure to facilitate delivery of water to their canal.

Design sheets are attached to this modification of the previous Future Fisheries Improvement Program. These designs include the fish passage component that was eliminated from consideration at this time. Inclusion of the fish passage structure on the designs relates to the uncertainty regarding the potential for construction of this feature in the future. Furthermore, FWP will be requesting bids for this component to provide a refined cost estimate in the event we reach agreement with the landowners.

Summary of Actions for the Chadbourne Diversion

This project addresses several repairs and retrofits that will preserve the functions of the Chadbourne diversion as source of water to numerous farms and ranches, and as a barrier to invasion by rainbow trout. The following are specific actions proposed to meet the agricultural and fisheries needs associated with this structure:

- Repair the front of the diversion to fortify the wall spanning the river, and repair the damaged footings. The design phase for wall repairs will ensure it is a velocity and leap barrier for migrating fish.
- Remove existing unformed splash pad and replace with smooth apron. Design criteria will include swimming and leaping abilities of fish to ensure these modifications do not allow fish passage over the structure.
- Eliminate sediment passage notch by making the height of the dam uniform across its length. This height is greater than the leaping ability of rainbow trout.

Rosgen Level II Characterization of the Project Site

Sources allowing characterization of the Rosgen channel classification at the project site include the fish passage assessment (OASIS 2006), the in-depth channel stability report (Allied Engineering 2011), and review of aerial photos. Cross-sections surveyed upstream, downstream of the diversion yielded width-to-depth ratios of 12, and greater, consistent with a C channel classification. Entrenchment varies within the area of the diversion. Immediately upstream of the diversion, the river abuts a terrace on the left bank, but has access to a forested floodplain on the right bank (Figure 8). Immediately downstream of the diversion, the river has access to a cottonwood gallery forest on both sides, indicating only slight entrenchment. Cobble is the dominant gradation on the streambed, making this reach a C4 channel. The relatively low sinuosity is the only substantial departure from C channel delineative criteria. Historic realignment of the river to move it away from Highway 89 and to ensure deliver of water to the Chadbourne diversion may be may be related to the apparently reduced sinuosity through this short reach. The aerial photos show evidence of old meanders, suggesting greater sinuosity in the past.

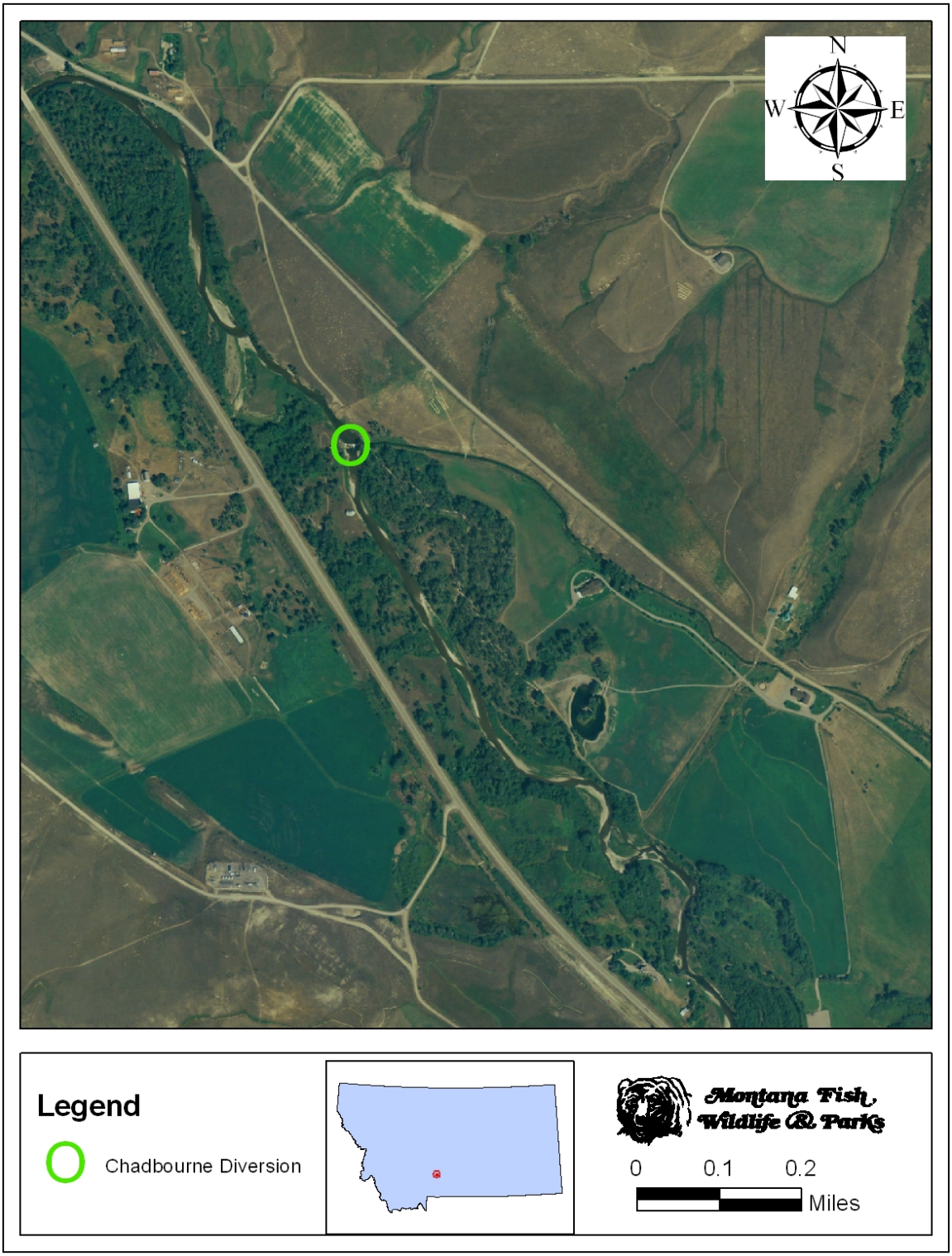

Figure 7: Aerial photo of Chadbourne diversion location.

Letters of Support

Patrick Byorth, *Staff Attorney*
Montana Water Project

Mark Lere
Future Fisheries Improvement Program
Montana Fish, Wildlife, and Parks
1420 East Sixth Ave.
Helena, MT 59620

May 26, 2011

Dear Mark,

It is my pleasure to support Carol Endicott's application for Future Fisheries funding to renovate Chadbourne Diversion on the Shields River to protect and conserve Yellowstone cutthroat trout in the Shields basin. For many years, FWP biologists have seen Chadbourne as a linchpin in long-term cutthroat conservation efforts. The diversion is old and failing and potentially losing its effectiveness as a passage barrier preventing rainbow trout from getting established in the basin. Our plan has long been to repair the dam in cooperation with the ditch company and install a fish ladder that will enable selective passage of salmonids and other native fishes past the dam, while preventing rainbow trout from getting through.

In the longer term, TU is excited at the prospects of restoring healthy Yellowstone cutthroat trout populations throughout the 350 miles of stream upstream of the diversion. We are actively working with ranchers and the Shields Valley Watershed Association to address water quality and quantity issues that are likely to have a significant impact on Yellowstone cutthroat restoration. Shoring up Chadbourne Diversion will kick off a long term commitment to fisheries restoration in the basin.

We hope the Citizens Panel and FWP will support this project, which clearly demonstrates that conservation can be mutually beneficial to agriculture, water users, and to fisheries. TU is proud to offer our support and matching funding to this worthy project. Please feel free to contact me if you have any questions. Best Wishes.

Sincerely,

Patrick A. Byorth

Trout Unlimited: America's Leading Coldwater Fisheries Conservation Organization
321 East Main Street, Suite 411, Bozeman, MT 59715
(406) 522-7291 ext. 100 • Fax: (406) 522-7695 • email: pbyorth@tu.org • www.tu.org

LOWER SHIELDS RIVER CANAL COMPANY
247 Shields River Road East
Livingston, MT 59047

April 10, 2010

Subject: Letter in Support of FW&P Fish Ladder

To Whom It May Concern

Dear sirs,

This letter is written to support the Fish Wildlife and Parks Fish Ladder Project, proposed at the site of the Lower Shields River Canal Company's (LSRC) irrigation diversion dam in the Shields River.

Improving Montana's fisheries is certainly a worthy goal. The LSRC shareholder/water users believe the Fish Ladder Project has considerable merit in achieving the objective of enhancing the long term viability of the Yellowstone Cutthroat Trout in the Shields River.

This project will contribute to the stability of the LSRC diversion dam and should not interfere with its operation, ensuring the continued uninterrupted flow of irrigation water to the water users.

Sincerely,

Robert F. Eyman
President
Lower Shields River Canal Company

Michael C. Dailey
Sec/Trea
Lower Shields River Canal Company